PUBLIC HEALTH REPORT

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Plague Warning

BETWEEN THE 14TH AND 17TH centuries, plague was a major threat to the world and in that time it killed an estimated 60,000,000 people, one-fourth of the world's population. Since that time both the incidence of plague and the character of the disease have changed. Long before the introduction of antibiotics, plague had become less of a threat to the world's population, but it is still a serious disease: The mortality rate for bubonic plague, if untreated, is 25 to 50 per cent. In California the last epidemic of plague occurred in 1924. There were 32 cases of the pneumonic form in humans, with 30 deaths.

At present, plague is a disease of wild rodents with very infrequent transmission to man. In the last 10 years there have been four cases in humans in the State, with one death. Infected wild rodents were the source of infection in all cases. The last California case in a human occurred in October in a five-year-old boy.

Periodically plague becomes epizootic in wild rodents in certain areas of the State. Last year the areas so affected were in the Lake Tahoe Region and in Shasta County, leading to the one previously mentioned case in a human. This year epizootic areas have been documented in several counties including Shasta, Lassen, Mono, Madera, Fresno, Tulare, Kern and possibly Kings. It is reasonable to expect that further investigations will reveal other epizootic areas. The animals that have been affected include wood rats, ground squirrels, field mice and chipmunks. Investigations to date indicate that this may be one of the most widespread epizootic infections to occur in California within the past 25 years.

For this reason the State Department of Public Health has issued an order prohibiting trapping, capturing or holding of rodents in areas known to be affected by plague and has revised the provisions of the Administrative Code to tighten existing regulations on the capture and sale of wild rodents. A note has been sent to all local health officers informing them of the epizootic condition and asking them to warn the public to avoid contact with wild rodents, especially any that appear sluggish or are obviously ill or are dead, and to ask anyone who sees animals in that condition to report to the local health officer.

Although it should be kept in mind that even a major epizootic does not necessarily lead to cases in humans, practicing physicians should maintain a high index of suspicion should they see patients with symptoms compatible with plague, especially if there is history of having been in one of the affected areas within the preceding two weeks. Children are more likely than adults to be infected, owing to the greater likelihood of their coming in contact with wild rodents and their ectoparasites.

Systemic manifestations include fever and chills, prostration, delirium, headache, vomiting and diarrhea. Local symptoms classically include lymphadenitis, with enlargement of lymph nodes especially in the groin, axilla or neck. If the disease has spread beyond the bubonic stage and caused septicemia, shock is a frequent finding. Following the septicemic phase, secondary invasion of the lungs by plague bacilli may cause plague pneumonia, a highly contagious and frequently fatal form of the disease.

Diagnosis of plague rests mainly with suspicion of the disease. Confirmation of the diagnosis is established primarily by isolation and identifica-

tion of the etiologic agent (P. pestis) from clinical material. Additional laboratory procedures are also available for confirmation. These tests can be performed in the laboratories of the State Department of Public Health. Arrangements for shipment of specimens from patients suspected of having plague should be made through the local health department. In any case in which plague is suspected, immediate notification of local health departments and to the State Health Department is essential in the control of this disease.

Streptomycin is the drug of choice in the therapy of plague. However, in recent years it has occasionally proven to be ineffective in some instances. If streptomycin does not bring prompt therapeutic response, either tetracycline or chloramphenicol should be used. If none of these drugs is available, sulfonamides may be effective. Penicillin is not effective in the treatment of plague.

All patients with plague should be put in hospital and isolated. For patients with bubonic plague, ordinary aseptic technique is adequate. An early film of the chest will demonstrate whether or not invasion of the lung has occurred. Although bubonic plague is not ordinarily transmitted from man to man, all contacts should be kept under surveillance for a period of one week. If surveillance is not feasible, chemoprophylactic use of broad spectrum antibiotics in doses of at least 1 gm per day for six days may be necessary. Sulfonamides also may be used for chemoprophylaxis in doses of 2 to 3 gm per day for six days.

In summary, physicians in California should be on the alert for the possibility of an occasional case of human plague resulting from widespread epizootics in wild rodents. It is estimated that the present epizootic may extend for two to three years.